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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,276

04/25/2006

Takayuki Watanabe

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EXAMINER

CHEN, VIVIAN

ART UNIT

PAPER NUMBER

1794

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,276	<b>Applicant(s)</b> WATANABE, TAKAYUKI	
	<b>Examiner</b> Vivian Chen	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

1. Claims 5-7 has been cancelled by Applicant.

### ***Terminal Disclaimer***

1. The terminal disclaimer filed on 8/12/2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of # has been reviewed and is NOT accepted for the following reason:

The signing attorney is not of record.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-4, 8-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over:

( ) claims 1-14 of copending Application No. 10/557,205 (US 2007/0054089), or

() claims 1-12 of copending Application No. 12/007,748 (US 2008/0138601),  
in view of JP 10-193494 (JP '494),  
and in view of EP 0 890 604 (EP '604) or TAKAHASHI ET AL (US 6,846,860) or  
TAKAHASHI ET AL (US 7,273,902).

The copending Applications claim white, highly reflective films comprising aliphatic polyester (i.e., polylactide resin) and a white pigment filler, wherein said films have the recited reflectance properties, pigment content, void content, and other recited features. Features not explicitly claimed (i.e., metal and other layers, etc.) would have been obvious to one of ordinary skill in the art as disclosed by JP '494 and EP '604 and the TAKAHASHI ET AL references.

JP '494 discloses that it is well known in the art to combine a reflective polymeric white base film with a metal layer and a surface layer in order to obtain a highly reflective articles suitable for use in LCD devices. The metal layer comprises silver or silver alloy, with a typical thickness of 10-200 nm. (entire document, e.g., paragraphs 3-5, 8, etc.)

EP '604 discloses that it is well known in the art to incorporate hydrolysis stabilizers such as carbodiimides as recited in claim 1 in typical amounts of 0.1-5 parts by weight into biodegradable polymers (e.g., polylactic acid, etc) in order to provide improved hydrolysis resistance and controlled biodegradability. (EP '604) line 56, page 2 to line 11, page 3; line 4-28, page 4; line 5-8, page 5) TAKAHASHI ET AL '860 discloses that it is discloses that it is well known in the art to incorporate hydrolysis stabilizers such as carbodiimides as recited in claim 1 in typical amounts of 0.01-5 parts by weight into biodegradable polymers (e.g.,

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polylactic acid, etc) in order to provide improved heat resistance, hydrolysis resistance and controlled biodegradability. (TAKAHASHI ET AL '860, lines 30-55, col. 2; line 32-65, col. 4; line 5-33, col. 7; line 19-37, col. 10) TAKAHASHI ET AL '902 discloses that it is disclosed that it is well known in the art to incorporate hydrolysis stabilizers such as carbodiimides as recited in claim 1 in typical amounts of 0.01-5 parts by weight into biodegradable polymers (e.g., polylactic acid, etc) in order to provide improved heat resistance, hydrolysis resistance, controlled biodegradability, and resistance to yellowing. (TAKAHASHI ET AL '902, line 8-27, col. 2; line 34-53, col. 4; line 33-55, col. 8; line 20-47, col. 11; line 5-20, col. 15)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a known environmentally friendly highly reflective white film derived from polylactide resin as claimed in the copending Applications as the base layer of the reflective film of JP '494 in order to form useful reflective laminates. It also would have been obvious to one of ordinary skill in the art to incorporate known hydrolysis stabilizers as disclosed in EP '604 and the TAKAHASHI ET AL references in to the films of copending Applications in order to provide enhanced resistance to heat, hydrolysis, and/or yellowing. One of ordinary skill in the art would have used conventional functional layers (e.g., adhesion-promoting layers) (claim 2-3) to improve the adherence between various layers of the laminate. One of ordinary skill in the art would have selected the filler content (claim 8) and film orientation conditions (claim 10) in order to obtain the specific reflectance and mechanical properties required for a given end-use. Since ambient light typically contains some proportion of radiation in the UV

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wavelength range and since the present claims do not specify the duration of the UV irradiation, the Examiner has reason to believe that the disclosed reflective white film would substantially retain its reflective characteristics upon exposure to ambient light at least for least a brief duration (claim 12). It would have been obvious for one of ordinary skill in the art to incorporate effective amounts of known stabilizing agents (e.g., UV absorbers, etc.) in order to minimize discoloration and to extend the use-life of the films to meet the requirements of a given set of usage or exposure conditions (claim 13).

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 103***

4. Claims 1-4, 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over:  
JP 10-193494 (JP '494),  
in view of ROSENBAUM ET AL (US 6,815,079),  
and in view of LANEY ET AL (US 6,846,606),  
and in view of EP 0 890 604 (EP '604) or TAKAHASHI ET AL (US 6,846,860) or  
TAKAHASHI ET AL (US 7,273,902).

JP '494 discloses a reflective multilayer film comprising a base layer, a metal layer, and a surface layer. The base layer is a voided white film comprising a polymer and a white pigment (e.g., titanium oxide, barium sulfate, etc.), wherein the film has a light transmittance of less than 50% and a reflectivity of greater than 90%. The metal layer comprises silver or silver alloy,

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with a typical thickness of 10-200 nm. The film is suitable for use in LCD devices. (entire document, e.g., paragraphs 3-5, 8, etc.) However, the reference does not explicitly disclose the use of aliphatic polyesters.

ROSENBAUM ET AL discloses that it is well known in the art to form reflective voided white films from a composition comprising primarily polylactide resins and a white pigment, which is suitable for metallization, in order to form economical, environmentally friendly white films with improved orientation characteristics. Functional coatings (e.g., adhesion-promoting coatings, etc.) can be applied to the film. The reference further discloses that it is well known in the art to incorporate known additives (e.g., stabilizers, etc.) in said white films. (line 10-14, 27-35, col. 1; line 42-68, col. 2; line 19-25, 44-55, col. 4; line 7-16, 50-63, col. 5; line 1-15, col. 6)

LANEY ET AL discloses that it is well known in the art to form white, highly reflective films comprising polylactide resin and barium sulfate and having a typical void content of less than 60 vol% and typical filler content of 23-65 wt% to obtain films having a reflectance of greater than 94% for wavelengths between 300-700 nm, wherein the reflective polylactide films are capable of achieving reflectance values of 98% or more. The films have a typical longitudinal stretch ratio of 3.3 and a transverse stretch ratio of 3.3. (lines 5-20, 59-65, col. 7; Example 1; Table 1)

EP '604 discloses that it is well known in the art to incorporate hydrolysis stabilizers such as carbodiimides as recited in claim 1 in typical amounts of 0.1-5 parts by weight into biodegradable polymers (e.g., polylactic acid, etc) in order to provide improved hydrolysis

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resistance and controlled biodegradability. (EP '604) line 56, page 2 to line 11, page 3; line 4-28, page 4; line 5-8, page 5) TAKAHASHI ET AL '860 discloses that it is discloses that it is well known in the art to incorporate hydrolysis stabilizers such as carbodiimides as recited in claim 1 in typical amounts of 0.01-5 parts by weight into biodegradable polymers (e.g., polylactic acid, etc) in order to provide improved heat resistance, hydrolysis resistance and controlled biodegradability. (TAKAHASHI ET AL '860, lines 30-55, col. 2; line 32-65, col. 4; line 5-33, col. 7; line 19-37, col. 10) TAKAHASHI ET AL '902 discloses that it is discloses that it is well known in the art to incorporate hydrolysis stabilizers such as carbodiimides as recited in claim 1 in typical amounts of 0.01-5 parts by weight into biodegradable polymers (e.g., polylactic acid, etc) in order to provide improved heat resistance, hydrolysis resistance, controlled biodegradability, and resistance to yellowing. (TAKAHASHI ET AL '902, line 8-27, col. 2; line 34-53, col. 4; line 33-55, col. 8; line 20-47, col. 11; line 5-20, col. 15).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a known environmentally friendly highly reflective white film derived from polylactide resin as disclosed in ROSENBAUM ET AL and LANEY ET AL as the base layer of the reflective film of JP '494 in order to form useful reflective laminates. It also would have been obvious to one of ordinary skill in the art to incorporate known hydrolysis stabilizers as disclosed in EP '604 and the TAKAHASHI ET AL references in to the films of copending Applications in order to provide enhanced resistance to heat, hydrolysis, and/or yellowing which allows for both extended use-life and controlled biodegradability. It also would have been



obvious to adjust the amount of voiding in the base film (claim 1) to optimize the optical and mechanical properties for specific applications. One of ordinary skill in the art would have used conventional functional layers (e.g., adhesion-promoting layers) (claim 2-3) to improve the adherence between various layers of the laminate. Since ambient light typically contains some proportion of radiation in the UV wavelength range and since the present claims do not specify the duration of the UV irradiation, the Examiner has reason to believe that the disclosed reflective white film would substantially retain its reflective characteristics upon exposure to ambient light at least for least a brief duration (claim 12). It would have been obvious for one of ordinary skill in the art to incorporate effective amounts of known stabilizing agents (e.g., UV absorbers, etc.) in order to minimize discoloration and to extend the use-life of the films to meet the requirements of a given set of usage or exposure conditions (claim 13).

### ***Response to Arguments***

5. Applicant's arguments filed 8/12/2009 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's arguments filed 8/12/2009 with respect to the double patenting rejections have been fully considered but they are not persuasive.

(A) Applicant argues that there is no need to file a Terminal Disclaimer with respect to copending Application 10/557,205 because a terminal disclaimer has already been filed in the '205 Application. However, the presence of such a Terminal Disclaimer in the copending

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Application does not eliminate the need for a proper Terminal Disclaimer in the present Application.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho, can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 4, 2009

/Vivian Chen/

Primary Examiner, Art Unit 1794